

THE NORTH DAKOTA FARMER



"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

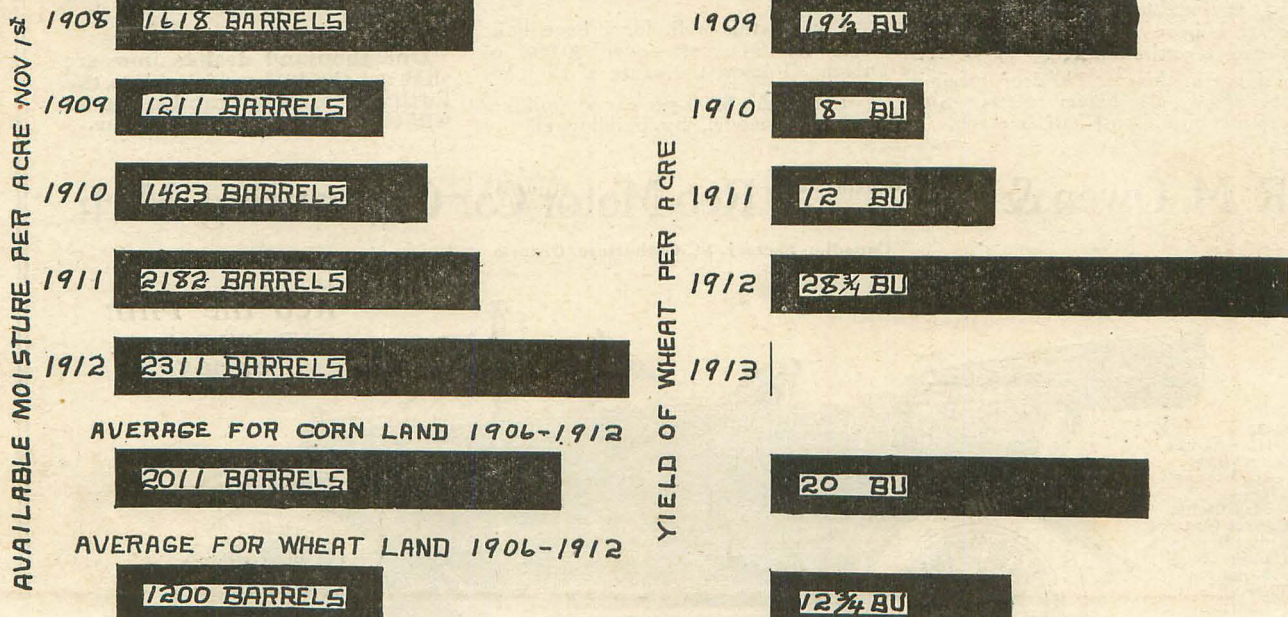
Vol. 14 No. 7

Lisbon, North Dakota, January 15, 1913

50 Cents A Year

MOISTURE AND YIELDS

AVERAGE ALL PLOTS IN NORTH DAKOTA DEMONSTRATION FARMS



BARREL EQUAL TO 50 GALLONS

PORTER AND PALMER N. DAKOTA AGR. COLLEGE

"This means that the crop of 1913 is going to have an excellent chance so far as stored moisture can help it."

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Each a Lucky Car

By R. E. Olds, Designer

In every make an occasional car proves almost trouble-proof. No breakdowns, no repairs.

The man who gets it tells his friends he got a lucky car.

But every buyer of Reo the Fifth gets a lucky car. This is how I insure it.

How I Do It

A lucky car means simply a car built with proper care and caution. I have spent 26 years in learning all that is necessary.

I have all of my steel made to formula. Then every lot is analyzed twice to prove its accord with the formula.

Then the finished parts are tested. In every part I require over-capacity, not less than 50 per cent.

The gears are tested in a crushing machine, to prove that each tooth will stand 75,000 pounds.

Springs are tested in another machine for 100,000 vibrations.

Added Cost

I use big tires—34x4—to save you tire expense and trouble. This year, by adding 30 per cent to my tire cost, I have added 65 per cent to the average tire mileage.

I use in this car 190 drop forgings, to avoid all hidden flaws. Steel castings would cost half as much.

I use 15 roller bearings—11 of them Timken, 4 Hyatt High Duty. The usual ball bearings cost one-fifth as much, but ball bearings often break.

I use a \$75 magneto to save ignition troubles.

I doubly heat my carburetor—with hot air and hot water—to deal with low-grade gasoline.

I use a centrifugal pump, instead of a syphon, to insure positive circulation.

I use 14-inch brake drums for safety. Also seven-leaf springs, two inches wide.

1000 Tests

The various parts of this car, during the making, get a thousand tests and inspections.

Each engine, for instance, is tested 48 hours—20 hours on blocks, 28 hours in the chassis.

Fitted parts are ground over and over, until we get utter exactness.

Each body is finished with 17 coats. It is deeply upholstered with genuine leather, filled with the best curled hair.

The electric dash lights are set flush with the dashboard. Thus the car's appearance shows the care we use.

Center Control

No other car has such easy control as you find in this Reo the Fifth.

All the gear shifting is done by moving a handle only three inches in each of four directions.

Both brakes are operated by foot pedals. So the car has no levers, either side or center, to clog the way in front.

You get in this car the wanted left side drive. The driver sits close to the cars he passes. Yet you shift the gears with your right hand, just as with the old right hand drive.

Costs Me \$200 Per Car

Reo the Fifth, without these precautions, could be easily built for \$200 less. For the first few months you might not know the difference. But in years to come this skimping might cost you several times \$200.

I know this well, for I have built cars for 26 years—over 60,000 of them. I know the cause of troubles.

I save this \$200 per car by building only one model, by building all my

own parts, by wonderful factory efficiency. And I put that saving into these extremes, to save you after-cost.

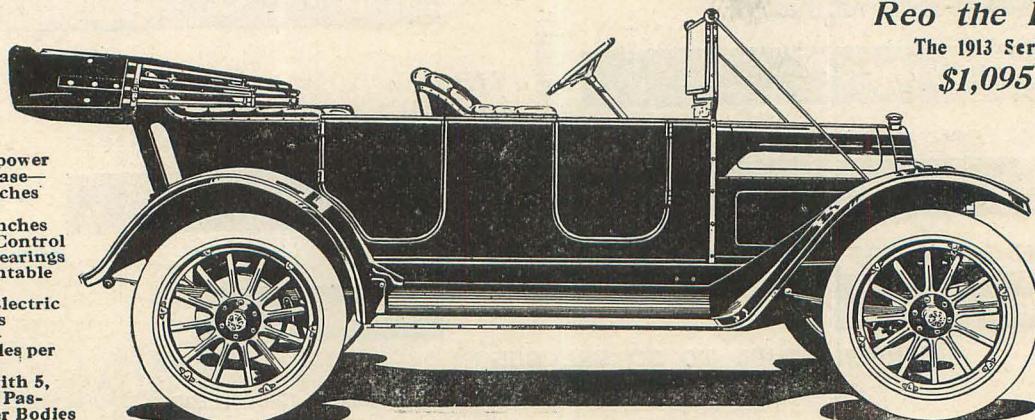
If you think that it pays to have a car like this, ask us to send you the details.

Our thousand dealers now are showing the 1913 model of Reo the Fifth. Write for our catalog and we will tell you where to see the car.

R. M. Owen & Co., General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**

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Horsepower
Wheel Base—
112 Inches
Tires—
34x4 inches
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Three Electric
Lights
Speed—
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Hour
Made with 5,
and 2 Pas-
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Reo the Fifth
The 1913 Series
\$1,095

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank for headlights, speedometer, self-starter, extra rim and brackets—all for \$100 extra (list price \$170).

THE NORTH DAKOTA FARMER

Vol. 14, No. 7

LISBON N. D., JANUARY 15, 1913

50 Cents a Year

CO-OPERATION BY FARMERS

President J. H. Worst

It is alleged of the farmer that he is independent. Too independent perhaps. His apparent or quasi independence reacts, however, to his disadvantage. Standing independent, in reality isolated the individual farmer is one lone producer pitted against organizations and combinations of every kind and character, great and small, that manage the business of the country. They price the products of the farm. They price what the farmer has to sell and what he must purchase. They fix the rate of interest he must pay and determine the security he must give. They make and administer the laws of the country. They assess the property, fix the rate of taxation and determine the purposes for which the public funds shall be used. The farmer is relieved of all these vexatious duties; practically so. But why?

On the other hand, the farmers' investment in land, buildings, livestock, and farm machinery exceeds \$40,000,000,000. They produce wealth annually in excess of \$9,000,000,000. This wealth is the toll taken from the soil every year and poured out into the channels of trade and commerce. Verily, the farmer is the bulwark of our national prosperity.

The whole people look to him for their daily bread. The mills and factories look to him for the raw material that gives employment to millions of sturdy workmen who, by their sweat and skill, elaborate the raw material into consumable goods for the satisfaction of human wants. Not only is labor thus afforded employment but the proprietors and stockholders of mills and factories are made prosperous. The bankers are enriched from his deposits and borrowings. Merchant princes owe their wealth to profits derived from his patronage. And yet the farmer has no part in fixing the price of what he has to sell or what he must purchase. He takes his products to the market and asks: "What are you paying today?" He takes the price offered, (What else can he do?) and selects the articles needed for his

family or equipment for his farm and asks again: "What do you charge for these?"

The farmer certainly is a useful citizen. But is he really independent? That he can live quite largely upon the products of his farm is true. That he can support his family, especially in the matter of food and has command of his own time, is equally true. But in the larger sense, in the sense of social, business and political equality, he is far from independent. In fact, there is no such thing as absolute independence for any class of citizens. There should, however, be equality of opportunity—a thing, moreover, difficult to conceive

By this arrangement, they eliminate all middlemen except such as are actually necessary and these are of their own selection, who receive for their services a specific per cent on the volume of business transacted. In other words, farmers produce individually, but co-operate in preparing their farm products for the market and exercise supervision over their final distribution. As a result, the profits and commissions that, otherwise, would go to numerous middlemen are divided between producers and consumers for the benefit of both. The cost of living is thus reduced and the price of farm products materially increased. Farming, by these means, is put upon a business basis. The world's market fixes the price of farm products, less cost of manufacture and distribution, the expenses of both of which, however, are reduced to a minimum. There is no wide uncontrolled gap separating the farmer from his customers, as here.



"Organizations and Combinations Price the Products of the Farm."

where the producer is powerless to fix the price or regulate to any degree the distribution of his products.

In the agricultural districts of Europe, the farmer, tho generally a renter, is more independent. By systems of co-operation, they prepare the product of the farm, by manufacture or otherwise, ready for the consumer's use and distribute the same by means of agencies under their joint control.

Moreover, the agricultural banks supply farmers with money and credit, for purposes of improvement, at a very low rate of interest.

Matters of credit and security for money loaned is practically under their own control. The advantages of cheap money and rural credit which have made European agriculture so wonderfully productive, however, did not come of their own

accord. Farmers had to work out their own financial salvation. They can do the same in this country. They can have anything in reason they desire and work for. But not as individuals. They must co-operate by means of organization just as they did in Germany and other European countries.

Plans are now being worked out for the establishment of a system of rural credits in this country, somewhat similar to those long established in Europe and of whose soundness there can be no question: But before any such system can be established farmers themselves must take the initiative. The demand must come from them.

With abundance of money, fluid as water, agricultural improvements can be made that are now impossible and by co-operation, the products of the farms can be distributed without the aid of so numerous a body of irresponsible middlemen, each of whom must have his profit. With abundance of credit, founded upon the best security in the world, land, a system of distribution can be evolved at once feasible, economical and satisfactory to both producer and consumer. What dire necessity compelled the foreigner to do, we may accomplish before driven to such extremity.

Co-operation is the watchword. Farmers must stand together for the protection of their interests just as other business concerns are protected by co-operation.

Will the farmers wake up?

NORTH DAKOTA COUNTRY LIFE CONFERENCE

The First Annual North Dakota Country Life Conference was held at the Agricultural College, December 18-20. The first day was "School Day." In the forenoon the classes for The Boys' and Girls' Institute were visited. The afternoon program included addresses and reports by sixteen county superintendents of schools.

Among the many things brought out were the following: Consolidated school lays the foundation for other co-operative work. The school belongs to the people; should be common meeting-place. People living isolated naturally are suspicious, contact dissolves this suspicion. School should be the social center. One consolidated school in the country has a \$100 victrola, moving-picture machine and gives regular entertainments. Many nationalities in North Dakota, school is the place where the children come together on a common basis, where language and denomination does not separate them. Why not make the school do the same thing for the parents? Have a debating society in every district. One county has 40 school picnics. A word picture was given of a rural community that had solved the

country-life problem. The school house is located on the school farm and garden. The schoolmaster is middle-aged man with a family. He lives by the school house. He lives there permanently. Will stay there until too old to teach. He teaches, not only the three R's, but also agriculture and what is perhaps fully as important he teaches the right attitude toward the farm. The result of this training is that the farm is more attractive to these boys and girls than the city. They have a knowledge of the soil, of plants, of animals; in other words they know the value of all these things and can see the beauty in them. Nearby the school house is the church and the manse. This happy community, however, is not in North Dakota, but in Denmark, the most advanced country in the world in agriculture.

In the evening was given a program by country people. It included band music, a play and recitations.

The first subject on the program for the second day was "The Country Church." H. W. Foght, of the National Department of Education, brought out the results of social surveys made in Missouri and Illinois. He reported that there are over 1,000 deserted churches in Missouri; 1,700 in Illinois. Thru a close survey of three counties in Missouri it was found that all but three of the pastors, and these owned land, lived in cities or towns. It took 92 cents of each dollar to keep the church alive, leaving 7 cents for church boards and missions and 1 cent for local benevolences. Rev. Aasgaard of Concordia College reported that two-thirds of the Lutheran churches were in the country, that the pastors lived in the country, and that the country church is the strongest, that it is in a flourishing condition. He credited this in a measure to the fact that a two or three-months' course in religious instruction was given the children each year. He also stated that conditions were somewhat similar in the Catholic church. Addresses were also given on leadership in country life, musical organizations, the rural library, the newspaper as a factor in country life. There was also an exhibition of charts to illustrate the social and religious conditions in the country.

In the evening the program was to illustrate what a church entertainment could be made. Moving pictures, games, and a social hour were included.

The third day was "Country Home Day." One feature was an exhibition of all of the modern convenience that are available for the home in the country, thru which it can be made as comfortable and convenient as the home in the city.

In the evening a country dinner was given to those attending the conference, members of the boys' and girls' institute, and the students of the Agricultural College. Mrs. Bertha Dahl Laws emphasized

the opportunities that the trained girl has for leadership in her community. Mr. Foght impressed upon the boys the big work that lies before them. The country life problem must be solved from within. The students of the Agricultural College will have to be largely responsible for the solving of the problem.

The conference summed up—comes to this—that the leadership in the development of country life must come from within and not from without, which again emphasizes the importance of the school and the church as factors in country life. This conference was planned and managed by A. G. Arvold of the N. D. Agricultural College. Another conference will be held next year.

ROTATION IN THE NORTHWEST

Any Rotation Better than None; Must not Burn Organic Matter, but Return it to the Soil

J. G. Haney, of the I. H. C. Serice Bureau

The question of rotation of crops—or some system of cropping that will be more profitable than the (Lack of) system now in practice, is certainly important. Everyone interested directly, or indirectly in the agriculture prosperity—or poverty of the northwest, realizes that the one class crop system is proving ruinous. Already there are thousands of acres of the richest agricultural region on earth—in the Red River Valley, that will not produce under favorable weather conditions enough small grain to pay expenses. There are other thousands of acres producing only ten bushels of wheat per acre, others producing twelve, and fifteen bushels, holding the greatest spring wheat producing state down to the shamefully low average yield of twelve bushels per acre.

There can be no reasonable excuse given for this condition, either why it already exists or why it should be allowed to continue. In every neighborhood there are farmers who have seen the error of their ways, and have fled, or are fleeing from the wrath to come.

Near Harwood, N. D. there are two farms about one mile apart, nearly of the same size. One was all in small grain, wheat and rye, and the wheat did not produce ten bushels per acre. On the other farm there is a diversification of crops and livestock. A field of forty acres of wheat on this place made thirty-two bushels per acre. Another field of forty acres of corn was practically mature before frost—several hundred bushels of good seed corn were saved, and the owner is considering the purchase of a carload of cattle so as to get full value from the crop—he has an example of what rotation and manure will do. The writer could recall instances of such examples in every section visited.

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North Dakota Farmer

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Farm, Stock & Home
This is a new and interesting publication for the farmer. It contains a great deal of information about the latest in farming, stock raising, and home life. It is a must-read for every farmer who wants to keep up to date on the latest in agriculture. The publication is published by the North Dakota Farmer, and is a part of the North Dakota Farmer Club. It is a great source of information for the farmer, and is a must-read for every farmer who wants to keep up to date on the latest in agriculture. The publication is published by the North Dakota Farmer, and is a part of the North Dakota Farmer Club. It is a great source of information for the farmer, and is a must-read for every farmer who wants to keep up to date on the latest in agriculture.

A Six Piece Music Supplement Free With Each Club

Containing words and music of the most popular song hits of the day is included free with each club. Full sized sheets. You know what six pieces of music would cost you. This is free with each club. Arrangement of clubs will not be changed, but papers need not all go to same address. Notice the high character of all the publications listed in these clubs. That splendid, practical fearless FARM, STOCK & HOME, Minneapolis, Minn., is included in each and every club.

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Lisbon, N. D.

Inclosed \$..... for which you are to send the Farmer

one year and Club No.

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(You Can Use This Coupon In Ordering.)

This Is a Great Offer.

There is no question as to the value of rotation, and it does not make much difference what the rotation consists of, but it is essential that there be a rotation or diversification of crops, if the prosperity of the northwest is to be indefinitely prolonged.

Henry Wallace of Iowa, says that weeds, insects, parasitic and fungus diseases of plants, etc., are God's way of calling attention to the fact rotation of crops is necessary. He further said that "If farmers refuse to comply with this warning to rotate crops, that they will be rotated off their farms." Some one back in the audience in popular slang remarked, "Ain't that the truth?"

While the question of rotation or diversification of crops is somewhat discouraging from the standpoint of the slowness with which it is put into practice, the results are always satisfactory. It is a very wise provision that the soil cannot be depleted by simply mining. The single crop grower is not a farmer—he is a miner. The miner has no regard whatever for the material from which he secures his gain, nor for the condition in which he leaves the dump. There are farms—or dumps in the Red River Valley that are in such condition, due to renting and careless farming, that are so foul with weeds and plant diseases, and the available fertility depleted to such an extent that it would be a hazard to try to make the crop pay for the work for several years.

Such lands are not worn out as is proven by what happens when a cultivated crop and a few loads of manure per acre is administered as a restorative—they are just resting.

The single-crop system is defended by saying that a money-crop is essential. The writer never heard of a crop being called a money-crop until he came to the northwest. All crops will make money if handled properly. It is said that the first settlers had to grow crops that they could dispose of for money to improve their farms. There was nothing wrong about this, as small grain gave better returns, and so long as this system gave good returns there was no need of considering rotations. But at the present time, in all sections that have been farmed ten to thirty years, this excuse for a single-crop system is certainly important, not only in the northwest, but all over America.

Professor Hopkins at Chicago, recently called attention to the fact that the high cost of living is due to the decrease in production in proportion to the increase in population, and that famine conditions are now extant in this new and productive country of ours. The year book shows the average yield of wheat in United States is 14.1 bushels per acre; Germany 28.9; England 33.1 per acre. Only poor old benighted Russia can put up a lower yield per acre than the United States.

The experiment stations and the better

farmers have shown that the yield of wheat and all other grains may be doubled with very little effort. Bulletin 100, N. D. A. C., recently issued, shows that "any old rotation" will produce good results. The average of all the rotations, apparently, that could be thought of in 1882 yielded 50% more than wheat alone. The results of one year corn and three years wheat show that more wheat was grown in this rotation in three crops than would have been produced in four crops of wheat. One-fourth of the land of North Dakota could be planted to corn in rotation, and there still be more bushels of wheat produced.

It costs just as much to prepare the land, plant and harvest a yield of twelve bushels per acre as it does twenty-four bushels per acre. If twelve bushels per acre will pay the expenses of farming, every bushel above twelve will profit. Corn alone in rotation will not maintain the productivity of the soil, but it will clean the land so that a profitable crop of small grain can be grown, and at the same time furnish feed for some livestock that in turn will call for the growing of clover and alfalfa hay.

The northwest is permanently a grain-producing section, and only such systems of farming should be considered as will continue the production of small grain. Wheat will continue to be in greater demand and at a higher price. The wheat-producing area is already restricted, and will have to be extended back into the livestock and corn-producing area to maintain the proper equilibrium in production. There are sections devoted too exclusively to corn and livestock just as the northwest is too exclusively devoted to small grain now.


(To be Continued.)

GOOD ROADS AND THE AUTO

The past year has been a notable one from the view-point of good roads enthusiasts in many directions. It would be noteworthy if there were nothing else to record than the action of many states in making liberal roads appropriations. New York tops the list with the \$50,000,000 bond issue, added to its previous appropriation of an equal amount. Pennsylvania follows with a proposed \$50,000,000 appropriation which there is assurance will be favorably acted upon by its state legislature. In California an \$18,000,000 bond issue is now being expended, in Maine the \$2,000,000 bond issue has been authorized, to be met by the automobile fees; smaller appropriations in other states, all point to a vast betterment in road conditions in the next few years. The defeat of the \$50,000,000 bond issue in Ohio is the only discouraging feature of the year, and even this, say Ohio good roads advocates,

is certain to be reconsidered in the near future.

Of the many conventions held during the year, two are especially noteworthy. The American Road Congress at Atlantic City, N. J., brought together road builders and road users in enthusiastic cooperation. Most important, however, was the first Federal Aid Good Roads Convention, called by the American Automobile Association and held in



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WHEATS!**

Winner of the \$1,000 Cash Sweepstakes Prize at the New York Land Show, 1911, and again winner of the Sweepstakes Prize \$2,500 Engine at the Dry Farming Congress, Lethbridge, 1912.

Mr. Joseph Ball, of Crookston, Minn., writes us under date August 30, 1912,—"I promised to report to you the results obtained from the Marquis Wheat purchased of you last spring. Of the 15 bushels ordered, I kept 9, but seeded only 8 1-2 bushels, so much being taken out for samples. This wheat was threshed the other day and by machine measure which we think will over-run, we got 231 bushels. The wheat was seeded on about 7 acres, making something like 33 bushels to the acre. I don't need to say that I am well pleased with the investment I made. With No. 169 Blue Stem wheat sown alongside of it two weeks earlier which looked much heavier and better, I got about 23 or 24 bushels per acre on the same kind of land."

OUR SUPPLY HAS BEEN SPECIALLY GROWN IN SASKATCHEWAN FROM THE ORIGINAL STOCK SEED. WE CLEAN IT OVER OUR OWN MILLS AND SHIP IN SEALED BAGS, IT IS FREE FROM ALL NOXIOUS WEEDS.

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Write us for further information and prices.

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REFERENCE:—Ask your banker to ascertain for you.

**STEELE BRIGGS SEED CO.
LIMITED
WINNIPEG, CANADA
CANADA'S GREATEST
SEED HOUSE**

Washington, D. C., in January, and out of which have already come results far-reaching and which give promise of greater things at no distant day.

The Federal Aid Convention formulated the proposal for the appointment of a Congressional committee to investigate and report upon the whole subject of Federal participation in highway construction. The resolution providing for such a commission was adopted by Congress, the Commission was appointed, and is now at work. The Federal Aid sentiment, already strong in Congress, found further expression in the appropriation of \$500,000 for the improvement of rural post-roads, and the good roads enthusiasm stimulated and crystallized by the A. A. A., with the agricultural, business and highway associations co-operating, has spread throughout the United States, so that the beginning of 1913 finds the Federal Aid question to be not one of whether the Government should spend National funds upon roads, but as to the form which such appropriations should take.

On this point another noteworthy event of the year was the action of the A. A. A. at its annual meeting in placing itself squarely on record as favoring the construction of a system of National Roads, and opposed to the scattering and piecemeal distribution of Government funds for purely local highways, which work properly devolves on the States, with county and township co-operation.

Even tho there is little likelihood of the present Congress taking any important action on the subject of Federal Aid, the Joint Committee is busily engaged collecting data and information upon which to base its report. All but one of the members of the Joint Committee have either been re-elected to the House, or their continuance in the Senate is assured. The Governors of all the states have been called upon for detailed information as to highway conditions in their respective states, and information is also being gathered from highway departments and other sources. As a result the 63rd Congress,

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That will give you satisfaction in style, fit and workmanship as well as in quality. Send in your breast, waist, seat, inside trouser, and sleeve length from center of back to hand, or send for measure blank.

N. ANDERSON

946 Barry Ave.,

Chicago, Ill.

when it comes into existence on March 4, 1913, will have before it a volume of information on the subject of good roads never before available, and which will be of vast service in formulating a policy of Federal Aid.

The second Federal Aid Convention, to be held in Washington simultaneously with the beginning of the new Congress, will bring the organized motorists, the farmers, and the business men who will be represented there into closer co-operation with Congress on this matter, and undoubtedly will result in speedy action along Federal Aid lines. This belief that 1913 will see the beginning of a new National roads policy is strengthened by the fact that the new President of the United States has placed himself convincingly on record in favor of Federal Aid.

Alfalfa Stew

Recent dispatches from the west announce the fact that certain Colorado hotels are attempting to popularize alfalfa stew as a means of offsetting the high price of meat. It appears that alfalfa flour has been made into very palatable bread for a long time. The only thing that has prevented its wider use is its color, which is quite similar to rye bread. The nutritious quality of alfalfa admits of no question. The one obstacle to be overcome is to give the bread, and presumably the stew, a more attractive appearance. There is, however, no more agreeable color to the human eye than the green of fresh-steamed alfalfa meal which is fed to live stock and poultry. If the stew looks anything like that it certainly should be a

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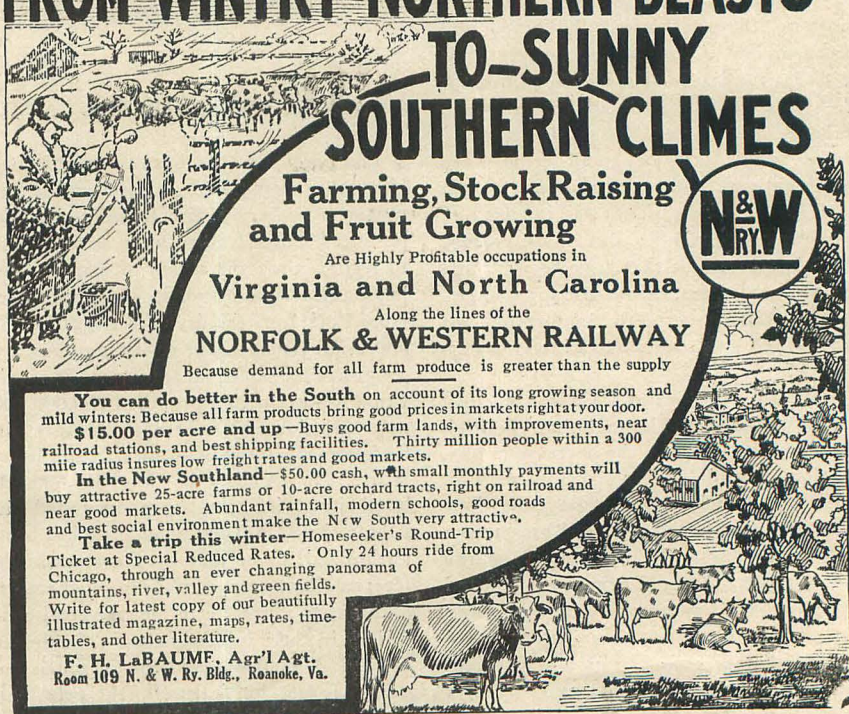
\$15.00 per acre and up—Buys good farm lands, with improvements, near railroad stations, and best shipping facilities. Thirty million people within a 300 mile radius insure low freight rates and good markets.

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Take a trip this winter—Homeseeker's Round-Trip Ticket at Special Reduced Rates. Only 24 hours ride from Chicago, through an ever changing panorama of

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popular dish in Celtic communities, particularly on the 17th of March.

Seriously, however, if culinary experts are able to furnish us with a new class of food made from alfalfa and are able to convince people that alfalfa flour is a good substitute for wheat flour, much will be accomplished toward solving the problem of our future cereal supply—the price of bread will not rise as it now threatens to do.

An American breakfast-food manufacturer is in Hawaii investigating the taro plant with the view of putting on the market a new food product made therefrom. The starchy, stemlike tuberous root of the taro is now boiled or baked,

made into bread or into poi, a fermented product, by the natives of Hawaii. The young leaves and tender leaf stalks are used, respectively, like spinach and as-

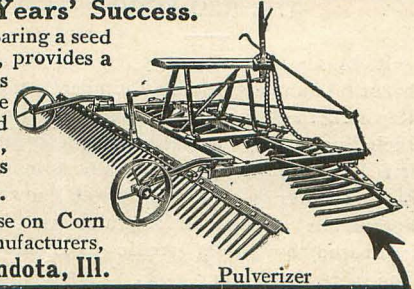
paragus. Cassava, another starchy tuber, which grows abundantly in tropical America, might also prove valuable for conversion into breakfast foods.

Towers' Surface System

Proves Worth by Twenty-five Years' Success.

It employs the most approved method of preparing a seed bed, furnishes culture that kills the weeds, provides a dust mulch which holds moisture and feeds and preserves crop roots—stirring all surface between the rows. To increase yield and quick maturity of corn, cotton, potatoes, etc., be sure your 1913 cultivator has "TOWER" on the tongue.

Let us mail you free illustrated "Treatise on Corn Culture." Write today. Address the manufacturers, J. D. Tower & Sons Co., 68th St., Mendota, Ill.



1843

The World's Greatest Wagon Factory

Seventy years ago (in 1843) Peter Schuttler made the best farm wagon in the world—with his own hands—in a little shop in Chicago. From the little shop of 1843 the business has grown, until today it is the greatest wagon factory in the world, with a plant that covers over 20 acres, still owned and under the active personal management of Peter Schuttler's grandsons.

The Old Reliable Peter Schuttler Wagons are built as carefully—as honestly—and as substantially today as they were in 1843. They have stood the hard test of racking service on the plains and mountains for 70 years. During all that time they have sold at higher prices than any other wagon—yet the demand for them has steadily increased year after year—because they have always been built better and have given more satisfactory service.

No inferior materials ever enter our factory, and the Peter Schuttler Wagon is made in but "One Grade of the Highest Quality."

Our sole aim is to make the "Old Reliable" Peter Schuttler—the "One Best" wagon that can be built, regardless of expense—one that will stand the test of hard service on the roads—one that can be sold at a fair price and that we can positively guarantee to give absolute satisfaction.

Year after year we have added new improvements and perfected new inventions, and have invariably maintained the high standard of Peter Schuttler Wagons. Our latest and most remarkable invention is the

Peter Schuttler Roller Bearing

The Greatest Improvement of Farm Wagons in 50 Years

Every machine on the farm has been improved—except the farm wagon. Our latest invention will revolutionize farm wagon construction. Every good farm wagon will soon have roller bearings, because they run so much easier, and do at least one-third more work.

The Schuttler Patented Roller Bearing Construction has been perfected and made so practical that it gives absolutely satisfactory results, with but little increase in cost over the ordinary farm wagon.

Write for our Free Book which fully explains the Schuttler Patented Roller Bearing Construction, and gives official tests by U. S. Gov. Road Experts.

PETER SCHUTTLE CO.
2524 W. 22nd Street, CHICAGO, ILL.



1913

Among Our Advertisers

THE REO ECHO

R. M. Owen & Company have issued a beautiful annual Christmas number of the Reo Echo, a 48-page handsome brochure. Including its popular 1913 announcement it is brimful of happy stories and humorous anecdotes on motoring by well known automobile writers, all of which are illuminated by bright scenic half-tones. The hair-raising story by F. V. Haney, of how he made the first transcontinental trip on Canadian soil by automobile thru virgin forests and canyons and over mountain trails is a classic and will be well worth reading by thousands of motorists who are interested in motor reliability, safety and efficiency. "A Motor Camping Trip" by E. H. Morse is unique, helpful and fascinating. "The Motor Car, a Source of Portable Power" is worth a mint of money to farmers, builders, contractors and business men who own automobiles. "What to do with Your Car in Winter" is meaty, timely and helpful. There are sparkling nuggets of wit, wisdom and patriotism from Washington, Lincoln, Grant, Clay and others that lend tone to the happy conception. These and other strong features certainly make it shine as a great house organ. A limited number of complimentary copies will be mailed to readers of the North Dakota Farmer by promptly writing to R. M. Owen & Company, 19 West 62nd Street, New York.

PETER SCHUTTLETT'S ONE HUNDREDTH ANNIVERSARY

In 1913 the Peter Schuttler Company will celebrate the 100th anniversary of the birth of Peter Schuttler, founder of the great institution that still bears his name.

Seventy years ago (in 1843) Peter Schuttler started building farm wagons in a little shop on the corner of Randolph and Franklin Streets in Chicago, which was then a small village only six years old, with a population of about 3800 people. He built the Old Reliable Peter Schuttler Wagons with his own hands and was one of the pioneer farm wagon builders in the United States.

Three generations of his sons and grandsons have grown up in the same business, and for over 70 years the business has been in the one family. It is still under the active, personal management of Peter Schuttler's grandsons, who are all practical progressive wagon builders.

As the business grew, larger and still larger buildings were erected—and upon

the death of Peter Schuttler the first in 1865 it was continued by his son Peter Schuttler, the second.

The factory was swept away in the great Chicago fire in 1871, and a new plant was erected at Clinton and Monroe Streets, which was the largest and most modern of its time.

In 1902 the present large plant was built. It is one of the largest in the world, covering over 20 acres of ground, and is equipped with every labor-saving device that will do the work as well as by hand.

The great lumber yards of the Peter Schuttler Company, in which five years of lumber supply is constantly drying, are celebrated thruout the world.

TAKE TIME TO STUDY SEED CATALOGS

Farmers should send for catalogs early so as to have plenty of time to study them and to determine without haste just what varieties they want to plant the coming season. Varieties are multiplying so fast, some of which are of decided value, that it is well worth while to make careful investigation whether you want to try them or stick to the old, tried crops. Much depends, too, upon the catalog. Some are given to verbal fireworks, while others give you at once a feeling of confidence that only facts are stated, even tho some wonderful figures as to crops are reported. Of this latter class is the catalog of John A. Salzer, the old reliable seedsman of La Crosse, Wis. No seedsman is better known to our readers, and probably no one sells to a greater number or a greater acreage of such staple crops as Alfalfa, Red Clover, Oats, Barley, Corn and Po-

tatoes. His catalog, including the big premium list for 1913 has just been issued and you will do well to get a copy. It is most complete and satisfying and, with the premium list, offers you a splendid opportunity to get really free some splendid things for personal use as well as for the home and the farm. A postcard will bring it. Address: John A. Salzer Seed Co., 215 S. 8th St., La Crosse, Wis.

TOWERS' SURFACE SYSTEM OF CULTIVATION

Preparation of a seed-bed for corn, cotton, sorghum, etc., is a first requisite after plowing the hard ground to a good depth. A most approved method is the use of a special pulverizer such as is manufactured in connection with the famous surface cultivator by J. D. Tower & Sons

25 Beautiful Gold

and embossed cards; assorted; only 10c
MODERN FARMER
Eldon, - Missouri

WAIT!

Get the Hinge Door and Lansing Book Before Buying Any Silo

Your choice of two famous silos. Learn about the Hinge doors—easy to open and close. Protects silage from freezing in winter and drying out in summer. Simple, rigid and safe ladder—7 inches foothold. Scores of big points for you. Write now for Book 8.

WOOD BROS. SILO & MFG. CO.
General Office, Lincoln, Neb.
Lansing, Mich., Maryville, Mo., Minneapolis, Minn., Cedar Rapids, Ia., E. St. Louis, Ill., Topeka, Kans., Lexington, Ky., Denver, Colo., Spokane, Wash. Write Nearest Office.



WE BUY FURS AND HIDES

for spot cash. 10 to 50% more money for you to ship Raw Furs and Hides to us than to sell at home. Write for Price List, Market Report, Shipping Tags, and about our

HUNTERS' & TRAPPERS' GUIDE 2d Edition. \$10,000 Book

450 pages, leather bound. Best thing on the subject ever written. Illustrating all Fur Animals. All about Trappers' Secrets, Decoys, Traps, Game Laws. How and where to trap, and to become a successful trapper. It's a regular Encyclopedia. Price, \$2. To our customers, \$1.25. Hides tanned into beautiful Robes. Our Magnetic Bait and Decoy attracts animals to traps, \$1.00 per bottle. Ship your Hides and Furs to us and get highest prices. Andersen Bros., Dept. 37 Minneapolis, Minn.

HIDES TANNED

We guarantee that the robes we tan will stay soft and not get hard in the coldest weather. Our robe tanning is wind proof and will also shed water and is moth proof. We also make coats out of hides sent us for tanning and we tan them so they are light in weight and a horse hide or cattle hide made by us does not weigh over 11 pounds.

We also tan cattle hides into Oak-tanned harness leather and raw hide lace leather; so if you use any leather for repairing your harness with it will pay you to send us a hide and let us tan it into leather for you, and you can save money by having hides tanned.

Send for our free price list and shipping tags and we will explain to you how you can save money by dealing direct with us. We have been in business here since 1904 and have one of the largest custom tanneries in the northwest. We are paying the highest market prices for hides and furs and keep a line of harness leather, lace leather and robes for sale.

THE LISBON TANNERY, Otto Jensen, Proprietor, LISBON N. D.

Send a horse hide or cattle hide and we will tan it into a nice soft robe for you.

Co., 68th St., Mendota, Illinois. This process as is well known makes a three-inch depth blanket of fine dust, which is needed to retain the moisture and liquid food for the plant. Every farmer is interested in the best method of caring for his crop and should write the above-named firm for their free, illustrated literature and testimonials of agricultural experiment stations and practical farmers who indorse the surface method of cultivation.

GREEN GOODS AGAIN

Far be it from us to offer advice, but may we not make, in a quiet way, the startling and novel suggestion that it would be a good idea for everybody now to begin thinking about his garden? You don't need to be an expert to make your spare land a source of revenue. Neither do you have to know anything about botany to begin raising flowers. Your land is good for something, no matter how unpromising. If you can't do anything better, put a nickel's worth of Sunflower seed or Wild Cucumber between the ash barrel and the back fence. Then watch results. If you once begin gardening, even in this modest way, you aren't likely

ever to stop. From things needing no care you will go to others needing a little, and by and by, working in the garden, feeling the soft ground under your feet, getting the fresh fragrance of the morning air, watching the little green shoots come up and develop, seeing the brilliant colors take the place of the dirty browns and grays of winter, will be more fun than anything you have done since you were a boy.

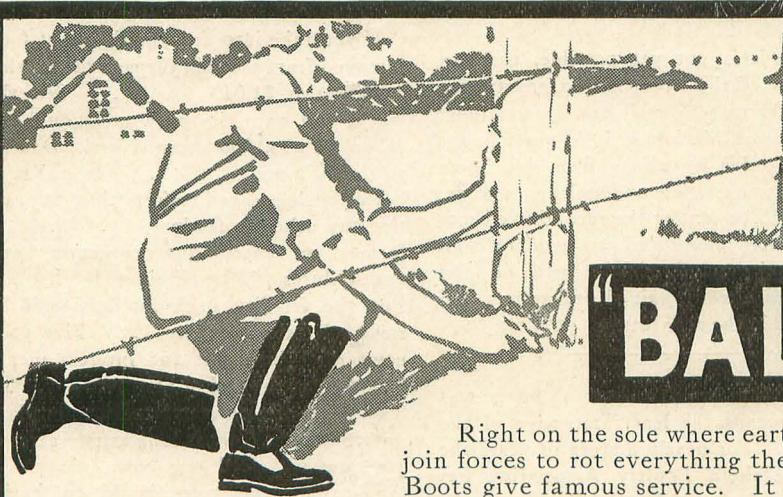
There is a greater incentive for gardening now-a-days than ever before. Fresh produce costs more to buy and home gardens are better than they used to be. There are finer varieties of vegetables and flowers. It is within the memory of some of our readers that Sweet Corn and Celery and Tomatoes came to be generally known; and the flowers of today—how they have come into their own! Sweet Peas and Asters and Cosmos, Pansies, Giant Morning Glories, California Poppies and all the other Poppies, these and many more a generation ago were unknown in their present glory.

Think about it. Make your plans now. When ready to plant get seeds that have been proven by some tried seedsman of national repute. Experienced gardeners buy only thoroughbred seeds; they don't waste their time on inferior or unknown quality. They depend on some old stand-

by, some firm with large capital, experience and a reputation to maintain. But as we said to begin with—far be it from us to offer advice. We merely suggest that you do not let another springtime go by without being a part of it.

MILLIONS OF FLIES IN THE MARKET

The health officer of the District of Columbia during the past summer installed fly traps in three of the Washington markets and at the same time supplemented his efforts with sticky fly paper. The results obtained were watched closely and the number of square inches of fly paper used was taken as the basis of calculating the insect slaughter by this means, twenty flies being estimated to one square inch. In all twenty-two million flies were destroyed. If the same ratio of destruction had been maintained in the other two—the largest markets in the city—the total number of flies eradicated would have easily reached the 50,000,000 mark. There is no doubt out that many of the fly inhabitants of markets bred in swill barrels and dung piles and then flew to the standing piles of butter, vegetables and meats, carrying with them on their feet, the germs of disease.



A Fence Post Gives Way at the Bottom First---So Does an Ordinary Rubber Boot

"BALL BAND"

Right on the sole where earth, air, water and wear join forces to rot everything they touch, "Ball-Band" Boots give famous service. It takes good brains and experience as well as good rubber to make a rubber

boot, and all of these enter into the making of "Ball-Band" Boots. From straps to heel "Ball-Band" Boots are built strong.

"Ball-Band" Boots are made to work in—not just to put on in very wet weather. Wherever the brush strikes above the shoe tops—wherever there's more wet than leather can stand—you need rubber boots, and "Ball-Band" Rubber Footwear is made for the man who knows this. Take a "Ball-Band" Boot and wear it out—you'll find it a harder job than you thought, because these boots are made to resist wear. They are made by men who know how to make them stand the snags, the bumps of frozen ground and the kicks of clods and rocks.

We only claim for "Ball-Band" Boots what they ordinarily ought to do. Many friends have written us some remarkable records of what "Ball-Band" goods have done.

Look for the Red Ball which is the "Ball-Band" trade-mark. You will see it in the store windows and on the boots. Remember when you buy "Ball-Band" Boots or Arctics that you make a long time investment in rubber footwear. If you figure the cost per day's wear you will find that "Ball-Band" Rubber Footwear is the cheapest you can buy.

Look for the "Ball-Band" sign—the Red Ball in store windows and on the boots. If the name "Ball-Band" is not there, you are not buying the boot we make. 45,000 dealers sell "Ball-Band" Footwear. If your dealer does not sell "Ball-Band" Boots we invite you to write us. We'll send you the name of a nearby dealer who can supply you. Write for Free Illustrated Booklet.

MISHAWAKA WOOLEN MFG. CO., 324 Water St. Mishawaka, Ind.
"The House That Pays Millions for Quality"



North Dakota Farmer

Entered as second class matter in the postoffice at
Lisbon, North Dakota.

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PROF. W. B. RICHARDS, Livestock.

**PROF. C. B. WALDRON, Fruits, Forestry,
Insect pests.**

GEO. HAUSMANN, Poultry.

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Vol. 14 JANUARY, 1913 No. 7

The 1913 Tri-State Convention is a
success.

One of the very best "cars" on a farm is
the manure spreader.

The strongest fortification against the
attacks of hot winds is the silo. In time
of peace prepare for war.

There is nothing actually lost, not even
the smoke from a burning straw pile, but
no one ever expects to recover it.

Why not let the housewife and the chil-
dren have a hive of bees? Since the
process of clipping the queen bee's wings
has been practiced there is little trouble at
swarming.

If home-grown seed is worth 20% more
than other kinds, is it not good business to
secure your seed early and from reliable
home dealers? The season's profits may
be stored up in that 20%.

As the Yankee mechanic makes his in-
ventions take the place of hard work, so
the farmer should make the intensive cul-
tivation of a small area replace the vain
struggle to cultivate too many acres.

After viewing the display of apples at
the Convention one is inclined to wonder
why our farmers do not plant a few apple-
trees on the south side of the grove. It is
about as hard to convince North Dakotans
that apples can be successfully grown as it
was a few years ago that corn could be
made a paying crop. It all depends upon
the variety of the corn, of the apples and
of the farmer.

A farmer who had himself won third
prize was heard to say at the Corn Show
this week, "I'd give a big price for but one
ear of those first prize ten ears. I mean to
stay by the winner 'til I get it." We
venture to say he would pay as much for
that one ear as was obtained from the
average acre of corn in the whole country.
Wonder why?

The fact that so many creamery pro-
motors were successful in disposing of so
many plants to communities before they
were in condition to maintain such an en-
terprise will tend to make stockholders
rather shy of a second attempt. Don't
let past experiences deter you from start-
ing a new creamery if you have the neces-
sary 400 milk cows in your neighborhood.
It takes cows to make the creamery suc-
cessful, not promoters.

Let every farmer in North Dakota keep
close tab on the doings of the legislature
now in session; Stand behind the legislator
who is working unselfishly for the farming
interests; uphold him by your approval of
his acts; urge him to support those meas-
ures introduced for the betterment of farm
conditions; warn him against those
shysters who are posing as the "farmers'
friends," yet are working for their own
selfish interests.

While it is not yet possible, thru an
oversight of the Post Office Department,
for the farmer to mail any parcel post
matter from his home, it is possible for
him to order by phone from his home
merchant any article under eleven pounds,
which will be sent at the rate of five cents
for the first pound and one cent for each
additional pound. Make use of the
privileges already gained and others will
be added in the near future.

The recent poultry show at Fargo was
by no means the least attractive of the
exhibits. For nearly a score of years the
North Dakota Poultry Association has
been building up an institution that is the
pride of the state. The N. D. F. would
encourage the poultry industry in every
possible way. By patronizing those who
have been the pioneers in this you will
show your appreciation. Be free to write
this paper or the head of the poultry de-
partment for any information along this
line. Long live the North Dakota hen!

The principal cities of the state will be
visited next month by a "Students'
Special," the only such train in the
United States. It will be in charge of the
President, faculty and students of the
Agricultural College. Those who are
fortunate enough to inspect the activities
on board will understand the meaning of

the slogan, "From Campus to Campus."
The train will be equipped and run by the
Great Northern, but the students of the
College will make the demonstrations and
give the entertainments.

Farmers, what do you think of the com-
bination of trust companies? When the
county commissioners thruout the state
advertised for bids for bonds, ten or more
trust companies over the country bid
exactly the same amount, and, what was
to your cost, the price for the treasurer's
bond was more than double the former
price. What is needed as much as any-
thing is a law providing that the com-
missioners may accept satisfactory per-
sonal bonds. The trust companies put
the present law upon our statutes, now let
the people make a change in their own in-
terests. The extra \$10,000 paid this year
in fifty counties for treasurers' bonds
alone could be used to better advantage.
Isn't \$350 a pretty stiff price for a \$50,000
bond? Think it over. One county at
least rejected all the bids and is now
awaiting relief from the present legis-
lature.

NUGGETS FROM PRESIDENT WORST'S ADDRESS AT THE TRI-STATE

If you take into account the plant food
removed from the soil, the cost of a bushel
of wheat is \$1.04. . . . Sell the
wheat and burn the straw and you have
taken \$70,000,000 from North Dakota
soil this year. . . . It takes a
better business head to farm than to prac-
tice any other profession. . . . A
farmer on every quarter-section, and
crop failures will be eliminated. . . .
Put the fertility back into the soil by
raising livestock. . . . Five good
cows, with butterfat and interest means
\$100,000 at the end of fifty years. . . .
Two acres of corn converted into ensilage
will feed eight cows as long as two acres of
meadow will feed one cow. . . .
An agricultural state should emphasize
three great principles:

1. To make each cultivated acre pro-
duce its best every year.
2. To foster a system of farm manage-
ment that will accomplish this end and
yet not impoverish the soil.
3. To encourage a system of co-oper-
ation among its farmers to sufficiently con-
trol the marketing and disposition of their
products so as not to be subjected to the
speculative forces that regularly rob them
of their legitimate profits.

Are you boosting the North Dakota
Farmer? One year, 50 cents; three
years, \$1.00.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade
ASK YOUR GROCER FOR THEM.

“BUY”

“EAT”

HOME BRAND

Pure Food Products

“ECONOMY” “SATISFACTION”

Griggs, Cooper & Co.

MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

**DR. PRICE'S
JELLY
DESSERT**
NUTRITIOUS-WHOLESAME

One package, 10 cents, makes one
pint of wholesome Fruit Jelly. All
flavors from true fruits.

The Purest of Pure Food Products

are packed under the Brands of

Nokomis
PURE FOODS

Kawatha
PURE FOODS

Blue Bird
PURE FOODS

Wampum
PURE FOODS

Stone-Ordean-Wells Company
DULUTH, MINN.

BRANCH HOUSES-Minot, Bismarck, N. D. Billings, Bozeman,
Butte, Great Falls, Mont.

MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WEL-
COME GUEST at every table where the
HOUSEWIFE demands the BEST. THE
MONARCH LABEL insures QUALITY in
Coffee, Catsup, Pickles, Maple Syrup, Canned
Goods or any article bearing the MONARCH
BRAND of REID MURDOCH & CO
CHICAGO

ANOTHER PURE FOOD PRODUCT

CEREKOTA

Self-Rising

Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients
and the Best Flour Milled in North Dakota

GUARANTEED Pure and Wholesome

Ask Your Grocer for a Trial Package

Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota

Livestock Department

FARM AND STOCK NOTES

N. J. Shepherd

Having things convenient saves time and labor.

Fowls will not thrive if kept too closely penned or crowded.

The man, the cow and the feed make the proper dairy combination.

Profit depends as much on the cost of production as on the selling price.

The cow that gives a heavy flow of milk needs more to eat than the strippers.

Cream or milk when kept at a low temperature for some time, often develops a somewhat bitter flavor.

It is the net result from a cow that tells whether she is making a profit or not.

The cause for the oily flavor in butter is often due to the over-heating of the cream.

The most dear profit in handling good horses lies in the fact that you have raised them yourself.

There are two methods of selecting the individual: first, by conformation and second by performance or a record of production.

The cost of production and the cost of marketing are the two great factors in determining the cost of a crop.

One great value in breeding and growing grade cows is that they get better or the herd increases in value with the breeding.

Prompt, positive action on the part of the driver has much to do with the action of a team and lazy men are often responsible for lazy horses.

Not only does the separator get the most cream out of the milk, but it makes the skim milk more valuable. It furnishes the skim milk when it is at its best for feeding purposes.

Thoro mixing of the cream secures perfect uniformity in ripening and all of the butter comes at once so that none is lost in the buttermilk under ordinary circumstances.

There is a best time and a best way for each farm operation and the measure of success that the farmer attains and also his comfort in doing his work depends, largely upon his wisdom in selecting

and promptness in seizing that time in which to do it and the thoroughness with which he does it.

There is a great difference in the motherly qualities of sows, and when a breeder finds one which produces uniformly large litters, and all good strong healthy pigs, while she has a constant and large flow of milk for her offspring, he should keep her for breeding purposes as long as she will breed well and she will be found to be one of the most profitable animals on the farm.

In the matter of feeding, too much care cannot be exercised, as on the ability of the horse to properly assimilate into his system the feed he eats depends his usefulness. So far as can be done, he should be given that which is the easiest digested, so that all the nutritious parts will be absorbed into his system and go to make flesh, bone and fibre.

GROWTH OF BACTERIA IN MILK AT LOW TEMPERATURE

Age of Milk	Temp.	Bacteria per cu. cm.
Inadequately cooled: deg. F.		
Fresh.....	46.4	49,000
24 hours.....	64.4	2,140,000
48 hours.....	75.2	.....
Thoroughly Cooled:		
Fresh.....	23.0	29,000
24 hours.....	37.4	36,000
48 hours.....	57.2	124,000

The milk that was inadequately cooled was long past the limit of safety at 24 hours, while the thoroughly cooled milk was still in good condition, bacteriologically, after 48 hours.

Chemicals having an injurious effect on bacteria are sometimes used to retard the growth of bacteria in milk and thus prolong the time within which it may be sold. This practice is so universally condemned by public opinion that it need not be discussed here.

Heat is frequently applied to milk to destroy a part or all of the bacteria. Complete destruction of all bacteria in any substance is sterilization; pasteurization is a term used to designate a process of heating by which milk or other fluids are heated to destroy part, but not all, of the bacteria. Pasteurization may be by the "flash" method in which the milk, flowing in a continuous stream, is heated and cooled very quickly, or the "holder" process in which the milk after being heated is held or retarded so that the temperature is maintained 20 or 30 minutes.

The temperature of pasteurization, as it

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

Perfectly Safe and Reliable Remedy for Sore Throat Chest Cold Backache Neuralgia Sprains Strains Lumbago Diphtheria Sore Lungs Rheumatism and all Stiff Joints

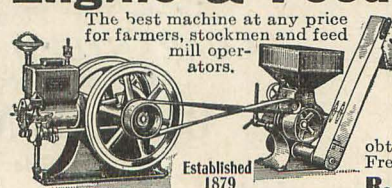
REMOVES THE SORENESS--STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."
Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

W. F. JACOBS Livestock Auctioneer

Thoroughly Posted on Pedigress

Terms Reasonable LISBON, N. D. Write for dates

Engine & Feed Grinding Outfit



The best machine at any price for farmers, stockmen and feed mill operators.

Established 1879

THE HOWELL ROLLER FEED MILLS have been wonderfully successful everywhere. They wear a life time, grind twice as fast with the same power as the best burr or stone mill made. Good money in custom grinding. Grinds Graham and Rye Flour as well as feed. Engine is of latest and most up-to-date design. Runs at proper speed to obtain best grinding results. Simple and Durable. Free Catalog D3 tells everything.

R. R. HOWELL & CO., Minneapolis, Minn.

is ordinarily practiced, varies greatly. As a general rule, to insure good results, the temperature must be increased as the length of exposure is decreased.

When the milk is held 20 to 30 minutes the best temperature is 145 degrees F. This is safely above the point at which the bacillus of tuberculosis is destroyed and below the temperature at which changes take place in the milk. Pasteurization at this temperature does not destroy all of the lactic-acid bacteria; consequently the milk will become sour before other bacteria have produced undesirable changes.

In the continuous machines, where the milk is maintained at the pasteurizing temperature usually for only 25 or 30 seconds, the temperatures used range from 160 degrees F. to 185 degrees F. The results at 160 degrees F. are uncertain, and any temperature below this point has little or no beneficial effect. Milk may be efficiently pasteurized in the household by setting the bottle of milk in a vessel containing water, and heating the water until the milk reaches a temperature of about 145 degrees. The bottle should then be taken from the water, wrapped in a towel and held 20 to 30 minutes. It should be then chilled at once and kept cold until used. Milk should in all cases be used within 24 hours after delivery.

Pasteurization should not be confused with sterilization. Even when the former is efficiently done many bacteria survive the heating and the milk must be properly cared for until it is used.

Milk may be sterilized by repeated boilings. This is usually accomplished by steaming on three or four successive days. After each boiling it should be held at room temperature for 24 hours to allow the spores to germinate and reach the vegetative stage. However, this method is by no means certain, especially if the milk contains a large number of bacteria, and to insure sterilization it is necessary to expose it to a temperature above the boiling point, which may be done in one operation by holding it in a closed chamber with steam under pressure.

Milk can also be sterilized by chemical means. The so-called "Buddeized" milk is sterilized by adding a small amount of hydrogen peroxid, which acts energetically on bacteria and is itself slowly decomposed into two harmless substances, oxygen and water. Milk treated in this way is said to be not entirely free from an objectionable taste and the sterilization is not always certain.

While bacteria are in no way essential to milk, they may be considered as normally present in milk, cream, ice cream, butter, and cheese. They may even occur in milk or its products in very large numbers without making it an unsafe food or in any way decreasing its food value.

Bacteria known to produce disease are seldom isolated from or counted in milk,

and bacteriological counts should be taken merely as an indication of the way in which milk has been collected or the temperature at which it has been held. High numbers usually indicate insanitary conditions, careless handling, or old milk. However, milk may be collected under very poor conditions and the bacterial count held down by a liberal use of ice. On the other hand, milk collected in the most sanitary manner may in a few hours contain a large number of bacteria if it is held at a high temperature. Low counts may be due not to clean stables, and low temperatures, but to the use of antiseptics.

Every effort should be made by legiti-

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279 Endicott Bldg., St. Paul, Minn.



ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN.

Comparison of Receipts and Shipments of Livestock for December 1912

Railroads	Receipts					
	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.....	345	120	1596	495	.....	39
C. G. W.....	1045	182	7211	583	25	142
C. M. & St. P.....	2846	594	14500	5590	48	358
M. & St. L.....	1552	441	9285	2143	.....	214
C., St. P., M. & O..	2435	623	22408	3431	65	438
C. B. & Q.....	309	33	3494	275	.....	59
M. St. P. & S. S. M..	4402	1240	11058	2992	.....	343
Gt. Nor.....	8179	2760	21126	17455	24	745
Nor. Pac.....	5334	848	8428	12325	24	369
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven In.....	634	126	591	211	38	.....
Total.....	27081	6967	99697	45500	224	2707
Increase.....	9715	1919	.....	17784	34	572
Decrease.....	.....	.....	2517	.....	.....	.....
Increase over 1911	9715	1919	.....	17784	34	572
Decrease.....	.....	.....	2517	.....	.....	.....
Jan. 1 to date.....	393059	130708	983665	627973	5314	32685
Increase.....	.....	4561	72932	.....	.....	562
Increase over 1911	.....	4561	72932	.....	.....	562
Decrease.....	19431	.....	.....	84153	2395	.....
Average Wts.....	781	215	221	91	.....	.....
Railroads	Shipments					
	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.....	1399	2	.....	150	.....	43
C. G. W.....	2464	113	422	3162	1	101
C. M. & St. P.....	4036	359	10575	8882	12	284
M. & St. L.....	955	1	.....	3	.....	31
C., St. P., M. & O..	4644	831	300	5045	16	182
C. B. & Q.....	1373	6	7806	3717	.....	133
M. St. P. & S. S. M..	826	18	.....	419	16	35
Gt. Nor.....	970	11	109	1127	45	43
Nor. Pac.....	1214	7	69	749	68	46
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven Out.....	518	187	136	109	1	.....
Total.....	18399	1535	19417	23363	159	898
Increase over 1911	9340	266	.....	11236	.....	332
Decrease.....	.....	.....	5835	.....	9	.....
Jan. 1 to date.....	269941	23266	228133	430633	5079	13138
Increase over 1911
Decrease.....	12279	12866	15473	110918	2558	1204

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Amenia - - North Dakota

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North Branch Stock Farm. High class Short-horns. Herd, bull, Supreme Judge 177722—pure Scotch, John Donnelly, Grafton, N. D.

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MISCELLANEOUS

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolfand Fox Hounds, Pure Bred Poultry, Pet Stock. Write them.

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Shropshire Bucks

J. S. BIXBY, - - LISBON, N. D.

FOR SALE. Creamery in first class condition at a bargain at Crystal, N. D. For further information write to J. S. GESTSON. Sec. CRYSTAL, N. D.

Oxford Down RAMS

A Few Choice Ones
 FOR SALE

Willobank Farm

EASTGATE BROS.

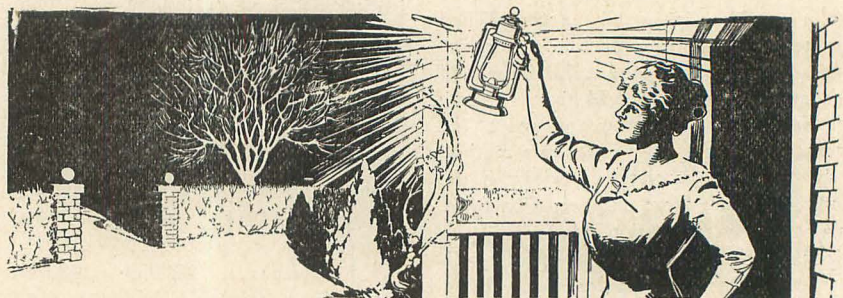
LARIMORE, N. D.

ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN. Comparison of the Origin and Disposition of Livestock for December, 1912 Origin of Livestock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	16271	5791	70642	14010	114	1736
Wisconsin.....	2483	520	15281	2002	.....	308
Iowa.....	34	5	452	.....	45	11
Far South.....	.....	.....	.....	.....	45	2
South Dakota.....	1051	96	4302	1472	.....	115
North Dakota.....	6740	551	9019	9825	20	433
Montana.....	448	4	.....	18191	.....	100
Far West.....	.....	.....	.....	.....	.....	.....
Manitoba & N. W. T.....	.....	.....	.....	.....	.....	.....
Far East.....	.....	.....	.....	.....	.....	.....
Returned.....	54	.....	.....	.....	.....	2
Totals.....	27081	6967	99697	45500	224	2707

Disposition of Livestock

So. St. Paul P'k'rs	9772	4640	81786	18960	.....	.....
City & State Butch	677	102	42	346	.....	24
Outside Packers...	390	696	18336	4355	.....	196
Minnesota.....	4003	379	585	4151	128	168
Wisconsin.....	1406	55	.....	1902	31	62
Iowa.....	4682	72	340	2211	.....	158
Nebraska.....	396	.....	.....	.....	.....	11
Kansas & Missouri	35	.....	.....	.....	.....	1
South Dakota.....	2581	198	.....	741	.....	79
North Dakota.....	192	2	69	556	.....	10
Montana & West..	1069	2	.....	.....	.....	27
Far South.....	.....	.....	.....	.....	.....	.....
Manitoba & N. W. T.....	.....	.....	.....	.....	.....	.....
Mich. & E. Can....	.....	.....	.....	120	.....	1
Chicago.....	1436	11	45	8981	.....	108
Ills. (ex Chicago)..	1397	18	.....	.....	.....	48
Eastern Points....	81	.....	.....	.....	.....	3
Returned.....	54	.....	.....	.....	.....	2
Totals.....	18399	1535	19417	23363	159	898



Rayo The Reliable Household Lantern

There is always need for a good lantern around the home—in the yard, in the cellar, in the attic—wherever a lamp is inconvenient or unsafe.

The RAYO is ideal for home use. It gives a clear, bright light—like sunlight on tap. It is strong, durable, compact, handy. Doesn't leak. Doesn't smoke. Easy to light and rewick. Will last for years. Ask for the RAYO.

At Dealers Everywhere.

STANDARD OIL COMPANY

(An Indiana Corporation)

Subscribers REMEMBER to Mention
THE NORTH DAKOTA FARMER
 When Writing Advertisers

Poultry Department

MONSTROSITIES AND FREAKS

Monstrosities and freaks every now and then crop out in the poultry-yard, according to reports, many of which seem hardly creditable.

Double-yolked eggs, as a rule, seldom hatch; but sometimes they do—in some cases bringing forth two perfectly formed chicks, and in others there are some curious formations.

A neighbor hatched from a double-yolked egg a chick with four legs, one body, two necks and one head.

Another hatched a three-legged chick from the same kind of egg.

Babcock tells of a double-yolked duck egg which hatched a three-legged duckling. He said this third leg was as useless as the fifth wheel of a wagon, and grew out of the duck's back. In other respects this duck was like the others, healthy and vigorous.

Babcock also reported a chicken with two heads and four legs, and a grown fowl that had two heads and apparently two

digestive systems, which, however, ended in a single vent.

The writer recalls a case where from the same setting of eggs a cockerel and pullet were hatched, each of which had only one leg. They were owned by an Italian. An agent for a museum hearing of the monstrosities, offered \$25 for the pair, but was promptly refused. Several nights afterwards the chickens were stolen.

An English writer tells of a chicken which had, protruding from the end of the backbone, another bone about an inch in length. From this two extra legs and feet depended. The extra bone being jointed, the chicken moved up and down while walking.

It is not unusual for deformities to be transmitted to the offspring. The writer had two White Plymouth Rock Cockerels engage in a battle thru a wire netting fence. During the fight one of the birds cut a piece off of his comb (V-shaped) by getting his fastened in the wire mesh. This cockerel was subsequently used in a breeding pen, and among his get was a cockerel that had a piece off of his comb cut out exactly the same place, and in the same style, as that of the parent bird.

It is common to hear reports of large eggs, small eggs, double-yolked and even triple-yolked, egg-within-an-egg, kidney-shaped eggs, etc. All such freaks are generally due to an overfat or diseased condition of the hen.

Sometimes there is a radical change made in molting. The writer had a White-faced Black Spanish hen that, while it originally was a black feathered bird, it turned partly white after the first molt. The next year it became two-thirds white, and the fourth year a pure white, not a feather on its body showing a tinge of black. The fifth year it molted part black, and in the sixth year it showed still more black, but, unfortunately, it died before it had another molt. Judging from the changes made each molting season, it would not have been much longer for it to have resumed its entire black coat.

NO CHICKENS IN THE MAIL

It is learned that the regulations for the government of the new system of parcels post, will eliminate the carrying of live-stock in the mail. It is understood that the reason for this is that if the farmer is permitted to send ducks or chickens or geese as "mail" the gate will be opened for demands from others who may want to ship rabbits, squirrels, white mice, dogs

and cats. To stop one will mean the stopping of all classes. This will be a hard blow to the day-old chick enterprisers which all along have been under the impression that the little birds will be allowed to be shipped as mail.

POULTRY NOTES

The average weight of goose eggs is about $5\frac{1}{2}$ ounces each.

In an egg of 1,000 grains, 600 belong to the white, 300 to the yolk, and 100 to the shell.

In 100 parts of the yolk, 52 per cent is

FOR RENT . . .

640 Acres, broke; Gasoline Engine and Gang Plow, Disks, Drills, Binders, Two Teams, etc., all for rent in Alberta, Canada. For terms, write to
FRED L. BUCK - **HARVARD, ILL.**



On Every Rod of

fencing you buy is not the difference in the price you pay. Usually low price fence is the dearest. In buying fencing take time to look into the way it is built. Find out how it is made, galvanized, woven, etc. Then buy the fence that has the ear-marks of quality, strength and long life. You'll find it *cheapest* in the end. Investigate

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Just get a postal card and write right now for our catalog. It tells how we prepare the steel—draw it into wire—anneal it, galvanize it, weave it.

It tells about the **SQUARE DEAL LOCK** which **double grips** the stay wires above and below the strand wires.

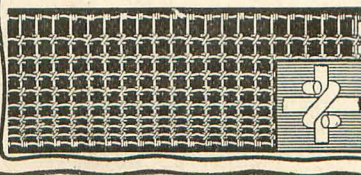
Tells why the **Wavy Strand Wires** keep Square Deal Fence always tight and trim, summer and winter.

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You need to read our catalog and get prices **before you buy**.

If you will send at once (before they are all gone) we will send you a fine Four-Section 2-Foot Rule **FREE**, postpaid. A postal will do.

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PEORIA - **ILLINOIS**



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The heaviest yielding, earliest and best Milling Hard Wheat in existence.

WON

First Prize at the New York Land Show in 1911
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First Prize (\$2500.00) at the Dry Farming Congress at Lethbridge in 1912

Our Wheat is grown on our own farms from seed from hand picked seed plots

**Guaranteed 99% Pure
Weighs 65 Lbs. per Bu.**

Write for price and sample.

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S. C. White Leghorn Cockerels \$1 each.
Oscar Anderson R. R. No. 2 Edmore, N. D.

S. C. Buff Orpingtons, S. C. Black Orpingtons,
M. Pekin Ducks and Indian Runner Ducks.
Maude I. Matthews - Larimore, N. D.

Eggs for Hatching

Orpingtons.....White.....Buff
Rock.....White.....Buff
Wyandottes.....White.....Buff
Wyandottes.....Silver.....Golden
Also a few cockerels.

Write your wants. Book order early.
O. A. Barton, Valley City, N. D.

R C R I REDS Now is the time to buy breeding stock for next year.

I can sell you last year's hen and cock or this year's pullets and cockerels. Prices, \$1.00 to \$2.50 each. You must order early. I have 250 to pick from.
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Bred to Lay and Win
Won all first at Fargo, N. D. State Show, 1906, 1907, 1908, 1909 and 1911. Stock at reasonable prices
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EGGS FOR HATCHING. White Plymouth Rocks (Fishels Strain) \$5 per 15. I have the Best in the Northwest. No exceptions. Indian Runner Ducks from Choice High Bred Stock, \$2.50 per 11. Canadian Wild Geese, \$1 per egg.
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Oriska, N. Dak.

WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap nest. Prices reasonable. Write
M. C. JAMES, Valley City, N. D.

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water, 45 per cent is oil and fat, and one per cent each of albumenoids, coloring and mineral matter.

In 100 parts of the white of an egg, about 84 percent is water, 12½ percent is albumen, one percent mineral, and 2½ percent sugar, etc.

The most notable growth of the duck is between the third and fourth week of its age, when it often doubles its weight.

It is claimed that in laying an egg, the pullet parts with about 1-60th part, by weight, of the total solid nutriment of its own body.

The proportion of down-feathers on the legs of Asiatic chicks when hatched, indicates the amount of feathers they will have when matured.

If one places his ear close to the body of a fowl while on the roost at night, when all is quiet, he can plainly hear the grinding of the food in the gizzard.

Ducks are practically immune from cholera, roup and gapes. Their favorite diseases are spinal meningitis and paralysis.



125 Egg Incubator and Brooder

Both For \$10

Why pay more than our price? If ordered together we send both machines for only \$10.00, and pay freight charges East of Rockies. Hot water, double walls, dead air space between double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Incubator and Brooder shipped complete with thermometers, lamps, egg-testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Send for FREE catalog today, or send in your order and save time. Money back if not satisfied. Write us today. Don't delay. (12)

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The IOWA Dairy Separator

Its simple, durable construction, its accurate gears set low under the bowl, its excellent tinware, its supply can and crank at exactly right heights, its easy running and easy cleaning features, its beautiful appearance—all these are very essential in a separator and before you go any farther you should

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This book describes and illustrates every part and gives you much valuable information about dairying. We will tell you the nearest Iowa Dealer if you don't know him.

Iowa Dairy Separator Co.

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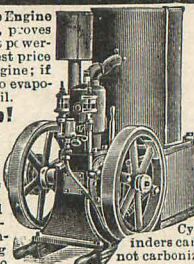
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Amazing "DETROIT"

—only engine running on coal oil successfully, uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric lighting plant. Prices (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate the money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write! (138)
Detroit Engine Works, 385 Bellevue Ave., Detroit, Mich.



Machine laid open to show the parts and arrangement

Note the arrangement of gears, the strong construction, the curved disc bowl. Compare it with any other separator

Look For The IOWA Dealer

"Shorts," according to Webster, is the "bran and coarse part of meal, in mixture." In some sections of the country bran is known as "shorts," and in other places, middlings bear that term.

When mating to produce table poultry, the cock should never be even moderately long-legged, unless the hen is unusually short-legged, for the cockerels from such a sire will be gawky and stilty in form when sent to market at an immature age. His breast should be broad, full and round, and his back broad.

On farms having high, dry land, which has a light growth of grass, and where a new breeding gobbler has lately been introduced, the largest flocks and the most thrifty looking turkeys are found.

It is an old belief that geese or their droppings will kill grass or destroy a pasture. The writer has a flock of six geese on a quarter acre of pasture, and, notwithstanding that geese have been on it for several years, it is as strong and vigorous in growth as ever; in fact, it seems to be in better condition than it was before geese were turned on it.

When eggs are candled, and show a pale, greenish hue, and the yolk wobbles around in a weak, watery white, they are called "Grass eggs." If cooked they have an unpleasant flavor. When a hen is made sick eating too freely of grass, she lays this kind of eggs.

A mongrel and a scrub fowl are not, necessarily, the same. The mongrel may be a large composite fowl of pure blood—that is, may be made by a cross of pure bloods, or a cross of pure bloods upon common stock. In either case it is removed from a scrub, which is a measley, small, common fowl, without a trace of pure blood in its veins.

There is no possible way of determining sex of eggs. Mapes very truthfully says that the best way to tell whether one contains a rooster or a pullet, is to hatch the egg under a hen, and watch the chick for about a year—if it crows it is a rooster; if it lays eggs, it is a pullet.

In a market fowl, the breast is the main thing, but in order to obtain a desirable breast it is necessary to have a good body first. So far as actual quality is concerned, the color of the skin is of no importance. But when the market calls for a yellow skin, it is important that only such be served. Poultrymen can neither afford to quarrel with the demand, nor try to reform it.

There is a poisonous fungus growth in nearly all the fatal diseases. Fowls never perspire, so that many of these evils may

be thrown off. On the contrary, they must resort to respiration. The result is that the great majority of poultry diseases are found in the head, throat and lungs, and, therefore, it is in these parts that we must look for the symptoms of disease.

In closely-built houses, where there is poor ventilation, the air becomes contaminated by gases arising from filth and the accumulation of droppings. As the hens are exposed to these gases during the night, it is no wonder that the system becomes poisoned by them and disease results.

Scummy drinking vessels cause sickness. They should be scalded out every now and then. Filthy water drank daily

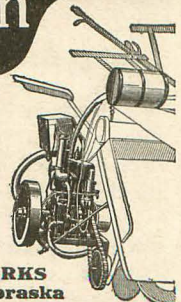
CALIFORNIA HONEY, freight prepaid anywhere on trial before paying. Three grades: 10½¢, 11½¢, 12½¢ pound. Sample 10c. Leaflet free. Agents wanted, good profits, steady orders. Spencer Apiaries Co., Box 171, Nordhoff, Calif.

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The Cushman 4 Horse Power, Original Binder Engine Saves a Team.

Operates to perfection under all conditions. No failure to cut on account of "skidding." Horses simply draw machine. Weight under 200 lbs. Attaches to any binder and is going into use everywhere. 30c to 50c a day runs it. For all farm uses. Get catalogue.

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C. C. DIBLEY & SON

1912

BREED THE BEST

Barred Plymouth Rocks

Light Brahmas

Single Comb Rhode Island Reds

White Plymouth Rocks

Buff Wyandottes


Columbian Wyandottes

Look up our winning in Poultry Herald, February and March numbers.

Stock and Eggs for Sale

WOLVERTON,

MINNESOTA, R. R. 1



Brings Solid Comfort to Old People

THE PERFECTION SMOKELESS OIL HEATER

All winter long—on the Zero days and the windy, blustering days—the Perfection Smokeless Oil Heater gives them real solid comfort.

It saves them many a cold and sickness for it easily warms the rooms not reached by the ordinary heat.

The Perfection Heater is made with nickel trimmings (plain steel or enameled turquoise-blue drums). Ornamental. Inexpensive. Lasts for years. Easily moved from place to place.

At Dealers Everywhere

STANDARD OIL COMPANY
(An Indiana Corporation)

is very irritating to the bowels. Water is the principal constituent of the flesh, bones, feathers, and eggs of fowls, and necessarily large quantities of it is consumed daily. Therefore it should be seen that the water supply is not only pure but fresh.

Bad cases of feather eating have been cured by painting around the bare places on hens that have had their feathers plucked, with a preparation made of powdered aloes dissolved in alcohol. Hens do not like the bitter taste.

A poultry keeper living some distance from the city says he found it difficult to secure animal food for his fowls, so he experimented with beans, peas, nuts, sunflower seed and peanuts with as good results as obtained from animal food.

It is claimed by one authority that one hundred pounds of clover meal contains enough lime for the shells of seventeen and one-half dozen of eggs. Clover is very rich in protein and contains potash, soda, phosphoric acid, and other ingredients that make it one of the best feeds for fowls that can be named. It contains all the essentials in well-balanced proportion, and is palatable to the fowls as well as healthful.

The American Standard of Perfection classifies the weights of geese as follows: Toulouse and Embden, adult gander, 25 pounds; young gander, 20 pounds; adult goose, 23 pounds; young goose, 18 pounds. African, adult gander, 20 pounds; young gander, 16 pounds; adult goose, 18 pounds; young goose, 14 pounds. Chinese and Canada, adult gander, 16 pounds; young gander, 12 pounds; adult goose, 14 pounds; young goose, 10 pounds. Egyptian, adult gander, 15 pounds; young gander, 12 pounds; adult goose, 12 pounds; young goose, 9 pounds.

There is a decided difference in the weight of eggs from pullets and hens, and of those laid by different breeds. These figures are approximately correct: Single Comb Brown Leghorn, pullets, seventeen and one-half ounces per dozen; hens, twenty-one and one-half ounces. Light Brahma pullets, twenty-three and one-half ounces; hens, twenty-three ounces. Black Langshan, pullets, 24 ounces; hens, twenty-six and one-half ounces. Pekin duck, thirty-five and one-half ounces.

The question of feeding flavor into eggs, was practically settled some years ago by Professor, F. E. Emery, of the North Carolina Experiment Station, who tried feeding onions to hens, with the result that the eggs of all those which ate the onions showed a more or less distinct flavor. Therefore, it appears that to get fine flavored eggs it is necessary to restrict runs enough so that no considerable amount of the food can be of such a character as to yield ill-flavored eggs.

The large breeds are best for caponizing. A few months old capon is no better than a cockerel. A capon will more readily put on fat and get large and prime after maturity. The object of caponizing is to secure quality and size, but quality is the most important. Age does not impair a capon as it does a cockerel, provided the bird is not kept longer than a year and a

half. Capons will have to mature before they can get much finish, and for that reason they cannot be sold while young.

HOW CAN HENS BE MADE TO LAY IN WINTER?

Answered by O. W. Dynes, N. D. A. C.

There are many factors involved in a complete answer to this question: 1st, pullets and not hens should be depended upon to do the winter-laying; 2d, birds with good breeding back of them, not necessarily pure breeds, should be used; 3d, the pullets should mature early and this means early spring hatching; 4th, sanitary, well ventilated, but not warm quarters necessarily should be provided. Fresh air should not be sacrificed at the expense of warmth. Fifth, good care and management and a regular system of feeding an efficient ration should be followed.

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School and Home

SUGGESTIONS FOR HOME DECORATIONS

Home Economics Dept., N. D. A. C.

To make the home serve its best purpose with reference to home life, comfort and economy, there must be orderly arrangement and correct selection of furnishings with reference to their beauty and use. To best accomplish this the following essentials must be considered: the plan of the house, the exposure of its rooms, whether it is to be a town or country house and the needs of its occupants.

We will consider in this discussion some of the essential principles concerned in the furnishing of a moderate sized home, presumably located in a small town or in the country.

Perhaps there is nothing which unconsciously causes more discomfort and irritation than a wrong use and combination of color. The eye is a nerve organ easily irritated by color and its irritation affects the whole body. For example, perhaps there is some room in your home which does not suit you. It seems too dark or close or perhaps you cannot ascribe a reason to your feeling. Is it not perhaps the color or combination of colors which to you are irritating? Or perhaps it is bad arrangement of furnishings. To use such conditions as a point of discussion. The exposure of the room, whether it is north, east, south, etc., should decide the color to be used on walls and floor. A north room which is always rather dark, should be finished in bright, warm colors. Rose pinks, lemon yellow and yellow tans with brown as the contrasting color are very good. The floor coverings should be much darker than the walls and the ceiling must be much lighter than either. A bit of brightness should be used in the furnishings, if possible. Such a room costs no more than one finished in dark, somber tones and will be a room pleasant to live in.

If the room has a south or easterly exposure, the colors used can be cooler to offset the bright light from without. Soft blues, pleasing grays and gray greens are especially good. Gray green is a very suitable color for a living room as it has a very restful effect upon the eye. Brown, which combines well with green, can be used to good advantage in the furnishings.

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Plain walls make a better background than walls covered with figures which in wall papers are often large and ugly. Cart-ridge paper, calcimine and alabastine shades or paint are safe wall coverings. Many of the calcimine and alabastine colors come in packages in powder form and should be mixed with water until desired shade is obtained; this can be tested by trying on a clean board, and allowing it to dry. These shades come at 50 cents per package. The average cost of a room would be from \$1.50 to \$2.00. Alabastine shades are preferable to calcimine. Paint is often used and has the advantage of being washable.

The kitchen, the most important room in the house, because the housewife must spend so much of her time there, should be made as bright and cheery as possible, giving the idea of absolute cleanliness. White or blue and white are best for walls. Calcimine or alabastine shades, paint and oil paper are all used. They are all cheap finishes. Oil paper can be washed and makes a most satisfactory covering.

Bedrooms should be treated with much brighter colors than other rooms of the house. The exposure must be considered, but light shades of cool colors are used even in very bright rooms. Light grays with rose color make a very interesting combination for easterly rooms. Inexpensive cretonnes, dotted muslins, scrims and pretty lawns can be used for curtains. Avoid lace,—such curtains can spoil an otherwise delightful room. Light pinks, blues, yellows, lavenders, greens and rose colors are also pretty bedroom colors. Dark and ugly furniture can be

transformed by white paint or enamel. Advertisements of enamels can be found in any of the magazines. They are not expensive and can be applied at home. Jap-a-lac is perhaps one of the best known. It comes in cans of almost any size from 10 cents to 50 cents. A 10 cent can will just about enamel a bed. There is absolutely no economy or sanitary value in dark ugly furnishings. Brightness and cheer are just as cheap and much more pleasant to live with.

Now as to furniture: every piece should give the idea of simplicity, comfort

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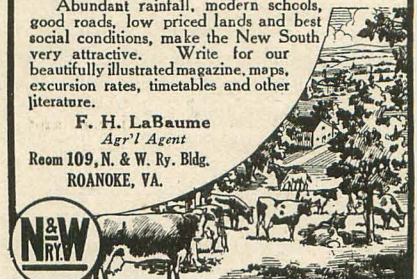
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and beauty. Mission and craftsman styles are very good as they combine the good qualities of beauty, simplicity, comfort and economy. A postcard to any reputable furniture house advertised in magazines will bring a catalog.

VARYING TASTE IN DECORATION

(Reprinted from the Dutch Boy Painter magazine published by National Lead Company.)

A few years ago very little thought was given to the exterior of the moderately priced house, and even much less to the interior. The planning of a house was considered more from the standpoint of convenience and economy than beauty and artistic effect. Regardless of the style of the house, each member of the family was apt to have some special idea, which he wanted carried out, and in order to adopt them the original plan was subjected to many changes. Starting in the beginning with very little attention paid to the type of its architecture, and with additions such as a corner bay window here and a tower there, the result was a mongrel type of a house that had no beauty and was oftentimes an object of horror to those sensitive to the good and the harmonious.

While this was true of the exterior, the crimes committed in the name of interior decoration were even more atrocious. We recall with a shudder the day of the over-decorated, stuffy "den," which at one time was considered the acme of elegance (save the mark!). The usual color of the den was red, brilliant and warm, and it was called cozy and comfortable because of this warmth of coloring. Heavy draperies and dark furnishings added to this "warmth." Walls were hung with pipes, brasses, plaques and oriental lanterns. Ginger jars and wooden shoes were used for match receivers, and in some instances, where great originality was striven for, a gruesome replica of the skull of poor Yorick, or some other member of the human family, grinned at one from some dark corner where it served the lowly purpose of holding tobacco. In fact, in every conceivable corner something was hung up to be ornamental regardless of its fitness.

Couch pillows of all sizes and shapes covered with all sorts of designs, such as Indian beads, canoes, beetles, and even spiders in their webs, expressed the prevailing idea of art. "Den" was an appropriate name for this sort of room—"cozy corner" a misnomer, while "chamber of horrors" would have been more fitting than either.

Most of us followed this extreme of fashion. The pendulum of progress had swung too far. It had produced the grotesque. Fortunately the past

few years have brought about great changes in individual taste in homes both on the exterior and the interior. Decorator and architect have done great service in educating the people up to the higher standards and much attention is devoted to harmonizing the interior decoration with the type of home always keeping in mind that the incongruous is to be avoided as the plague.

During this process of change, however, the eagerness to advance was the very thing that brought the Ornate Age upon us. The pendulum of progress had received a vigorous push and it had swung too far out of its normal arc and over-ornamentation was the result.

Elaboration both in decoration and furnishing was the fashion. Bright-colored wallpapers with large, bold designs were considered fashionable. No attention was paid to harmony in the treatment of walls. The desire seemed to be to have as many different colors in different rooms as possible.

These elaborate and extreme effects existed as to furniture and architecture as well, and after years of massiveness and showiness the pendulum now marks the time of higher ideals in art and more cultivated taste.

The decorator who has not followed this change and who does not realize that the age of simplicity in all forms of decoration is upon us, has missed the hand-writing on the wall and his success may well be questioned.

Dwellings now have a certain individual type and artistic interiors are demanded. Artistic feeling is the keynote of success now, both within and without the home.

Extreme types of decoration may have their place, but one soon tires of them, and the home must be of a type that will stand the test of time and still be beautiful.

Also the houses built today are dependent upon the skill of the decorator both outside and inside, for their real beauty. Appropriate colors for outside painting are just as essential as the color chosen for the wood trim or walls inside.

Surroundings should be considered, as well as the type of house, for exterior painting. Never advise the use of a color because you like it nor because it is desirable alone, but consider its relation to other houses around it. If this is followed out it will make certain localities very artistic and beautiful.

Craftsman houses and odd bungalows will have their day. People may like them now, but it is an extreme type and will become tiresome in course of time. The uncompromising, squareness in the craftsman style, with its small wall space, does not permit of much artistic decoration.

Interiors with heavy woodwork and

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heavy rafters, unless in spacious buildings, will become depressing. Imagine living in a room with heavy beams over one's head, and at no greater height than ten or twelve feet! Such rooms are contrary to nature. They are confining and in small interiors the feeling of weight overhead creates an unpleasant effect.

Interiors should be handled so as not to impart the feeling of limitation or confinement. Walls should not be treated as boundaries but as backgrounds for the furnishings (just as in a picture the background should never seem to be there). Walls should serve as a setting for the rest of the room.

This is a most important feature in decorating. Study carefully this first principle.

HOW TO DETECT DIRTY MILK

The present era of "standardization" of foods and drugs has brought about marked improvement in many products which enter largely into every-day life. This has been accomplished by the introduction of scientific methods of examination which are sufficiently "practical" to be easily applied, and which are simple enough to appeal to the average layman as furnishing useful information. The Babcock "test" for the estimation of the fat content in milk is a conspicuous illustration of the value of an accurate, yet uncomplicated device. It has been largely responsible for the improvement in the composition of milk by making an exact determination easy to carry out. Even in the smallest hamlet the results of the Babcock fat test are today the standards by which the commercial value of milk is judged.

In determining the purity as well as the quality of milk the bacterial count has an obvious importance; but this calls for elaborate laboratory apparatus. The acid test gives some indication of the age and general condition of milk and is used along with curd and fermentation tests by some creameries and cheese factories. The so-called sediment test has of late achieved considerable prominence in certain parts of the United States, according to The Journal of the American Medical Association. The amount of sediment in milk is an indication of unsanitary conditions, for dirt in milk is not only unsightly and unpalatable, but serves to carry with it the dangers of all kinds of contaminating bacteria. Dirty milk always has a high bacterial count. It is very objectionable if not actually dangerous. Clean milk does not necessarily call for special farm equipment or great outlay; it merely demands attention to small details and a reasonable amount of care in stable-management. The partially covered milk-pail has been an efficient innovation in the direction of excluding dirt ac-

quired during the milking process. One of the best ways of inducing the delivery of clean milk is by convincing the producer that his milk contains sediment, and by demonstrating thru actual trials that it is easy to produce the cleaner variety. The sediment test is made by straining a pint of milk thru a cotton disk one inch in diameter which is attached to the bottom of one of the several varieties of inexpensive testers. The evidence all indicates, further, that when small-top milk-pails are used the dirt content is decreased and the number of bacteria present is correspondingly reduced. Under certain conditions the sediment test may even be used as an approximate indication of the number of bacteria that are introduced into the milk on the farm. Of course dirty market milk may be strained carefully so that it appears cleaner than its earlier handling justifies; but dirt and manure will leave their effects no matter how milk is subsequently treated. The sediment test record is a case in which "seeing is believing."

How can one tell when the iron is hot enough for ironing?

It depends upon the fabric to be ironed. Linens and cottons should be ironed with a hot iron. Woolens and silk should be ironed with a moderately hot iron. To tell when an iron is hot enough—test it upon a crumpled piece of newspaper. If it smooths the paper without scorching it is hot enough for cotton or linen. When the iron is too cool for ironing linens and cottons well, it is about right for ironing woolens and silks.

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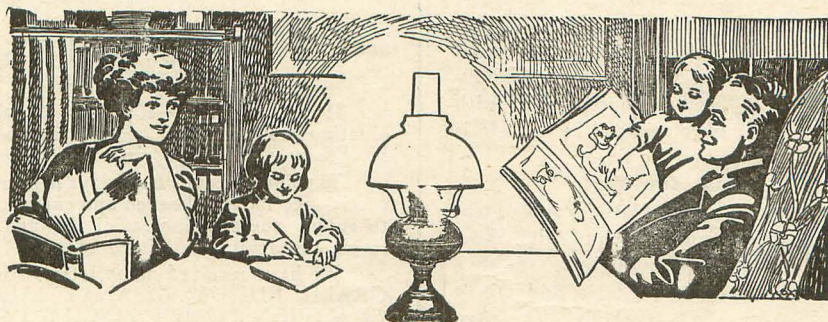
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Steak Roast

Take a round of steak, pound, pepper and salt it well. Take dry bread crumbs and make a dressing of them and spread over the top of the steak. Roll it up and tie it with a string, put it in a pan and roast forty minutes.

Beef Stewed with Onions

Cut two pounds of tender beef into small pieces, and season with pepper and salt; slice one or two onions and add to it, with water enough in the stew-pan to make a gravy. Let it stew slowly till the beef is thoroly cooked; then add some pieces of butter rolled in flour, enough to make a rich gravy. Cold beef may be cooked in the same way, but the onions must then be cooked before adding them to the meat. Add more water if it dries too fast, but let it be boiling when poured in.

Bread Pancakes

Three eggs, well beaten; one tablespoonful of melted butter; one-half cupful of flour; one quart of sour milk; two cups of bread crumbs; one teaspoonful of salt; one-half teaspoonful of soda

Chicken-Pie Crust

Take a quart measure full of flour and mix with it four teaspoonfuls of baking-powder, a pinch of salt, and one teacupful of lard. Moisten with sweet milk sufficient to roll. Roll out once, spread with butter, lap it over and roll again. It is then ready to put on the pie.

Crust for Tarts

Rub one teacupful of lard into three teacupfuls of flour and a pinch of salt. Beat the white of one egg slightly, add five tablespoonfuls of water to it, and mix it into the flour. Do not mix more than necessary, and it will be a flaky crust.

Brown Betty

Pare and core a dozen large, juicy apples, then crop fine. Butter a deep pudding-dish, place first a layer of chopped apples, with some bits of butter strewed over them, sprinkled with white sugar, nutmeg, lemon essence, or the juice and a little of the rind of a lemon. Next a layer of bread crumbs, then a layer of apples, and so on till the dish is full, finishing with a layer of bread crumbs. Send it to the table hot or cold; eat with cream sauce.

Peach Cake for Dessert

Bake three sheets of sponge cake as for jelly cake; cut canned peaches in six thin slices, or chop them; prepare cream

by whipping, sweetening, and adding flavor of vanilla, if desired; put layers of peaches between the sheets of cake; pour cream over each layer and over the top. To be eaten soon after it is prepared.

Dried Fruit Pies

Wash the fruit thoroly, soak over night in water enough to cover. In the morning, stew slowly, until nearly done, in the same water. Sweeten to taste. The crust, both upper and under, should be rolled thin; a thick crust to a fruit pie is undesirable.

Meat Notes

Do not salt your meat until nearly done, as it extracts the juices.

To thaw out frozen meats, lay them in cold water. This should be done only shortly before using.

After slicing from a ham, rub the cut side with cornmeal, as this prevents the ham from becoming rancid, and rubs off easily when needed again.

In cooking tough meat or an old fowl, add a pinch of soda to the water to make it tender.

If you have not tripods to lay in your roasting-pan to keep the meat up out of the juices, lay across the pan some clean pieces of wood.

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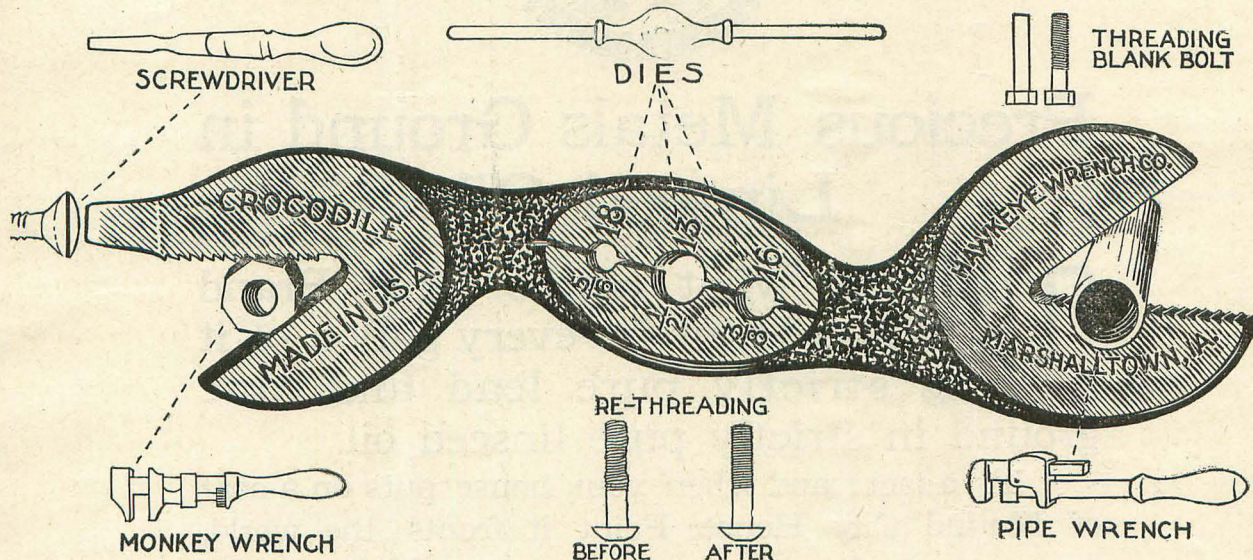
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Strictly pure linseed oil is the liquid that binds these natural partners together.

Zinc takes more oil to the pound than lead, and, because "oil is the life of paint" lead plus zinc makes the best paint known.

Base metals are sometimes used in paints, but their value is unproved—and unless you are willing to lend your two or three-thousand-dollar house as a subject for experiment—better keep on the safe side and buy Mound City Horse Shoe Brand House Paint, which is made of really precious metals, in right proportions, and rightly ground in pure aged linseed oil.

Mound City Paint & Color Co.

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